Amendments to the Drawings

As required by the Examiner, an amended Figure 4 is attached as a replacement sheet and labeled "Replacement Sheet," wherein Figure 4 is designated by the legend --Prior art--.

Attachment:

Replacement sheet of drawings, amended Figure 4.

REMARKS/ARGUMENTS

In response to the final Office Action, mailed July 18, 2007, please amend the above-identified application as follows below.

First applicants would like to thank the Examiner for the courtesies and helpful suggestions extended by the Examiner to applicants during the telephone conference interview of August 22, 2007. During the interview, a discussion was held of the perceived differences between applicants' claimed invention (as recited for example in claim 63) concerning a copy protection process/apparatus, and the scrambling/descrambling process/apparatus of (primarily) Kim (US 5,799,081A), and also Ryan (US, 5,590,194A), both of record. Also discussed was the Examiner's proposal for several possible amendments to claim 63 (and others) to clarify for example the expression "copy protected video signal," the addition of the feature "programmable" copy protection signals and language to further define in the claim(s) that the copy protected video signal (although copy protected) still is viewable.

No agreement with respect to the claims was reached.

It follows that various amendments made to the claims in this amendment involve subject matter discussed with the Examiner during the telephone conference interview, which amendments were in part graciously suggested by the Examiner. Applicants appreciate the Examiner's helpful comments.

In the Office Action the Examiner withdrew newly submitted claims 93-96, 98, 118-124 as independent or distinct; objected to the Figure 4 submitted in the previous amendment; rejected claims88, 89, 92 and 104-107 under 35 USC 102(b) as anticipated by Ryan (US 5,590,194A); rejected claims 63-80, 82-85, 97, 99-101 and 103 under 35 USC 102(e) as anticipated by Kim et al. (US 5,799,081A); rejected claim 86 under 35 USC 103(a) as unpatentable over Kim et al. ('081); rejected claims 90 and 91 under 35 USC 103(a) as unpatentable over Ryan ('194); and rejected claims 79, 81, 87 and 102 under 35 USC 103(a) as unpatentable over Kim et al. ('081) in view of Oguro (US 5,907,655A).

By this amendment, claims 63-92, 97 and 99-117 are variously amended and are submitted for reconsideration in view of the remarks following below.

Applicants include herewith a corrected drawing of Figure 4, labeled "Replacement Sheet," with a label designating Figure 4 as --Prior Art--, as required by the Examiner.

With regards now to the various rejections made by the Examiner in the Office Action based on Ryan ('194) and or Kim et al ('081) (hereinafter Kim ('081)) applicants respectfully submit that the subject matter and or features disclosed in these references fail to anticipate or make obvious the features of the present invention as claimed, particularly as clarified by the amendments submitted herein.

To illustrate, Applicant respectfully draws to the attention of the Examiner the fact that the present invention is based on and thus is concerned with the application of copy protection or anti-copy protection processes, not scrambling (encrypting) processes. Those skilled in these two separate technologies are fully aware that the two processes are based on different concepts and produce decidedly different and distinct functions and results.

Video copy protection is defined as a process or system whereby a copy protected video signal is viewable (watchable) in, for example, any receiving television set or monitor. However a played back version of a recording of the copy protected video signal is degraded by the copy protection so that it produces a signal that is not acceptably watchable.

Thus a copy protection process is to be differentiated from a video scrambling or encrypting process. A scrambled video signal is not watchable on a TV set or monitor unless it has been descrambled, whereas a copy protected signal is watchable even though it is still copy protected. It is a well known fact that a scrambled signal by definition is unwatchable until it is descrambled. However, once descrambled, the signal then is not only watchable but also is copiable any number of times. It may be seen that in any mode of operation, the output signals 40, 58 or 88 in Figures 1, 2 or 3 of Ryan ('194) are scrambled and thus are unwatchable. To the precise contrary, the copy protected signal received by applicants' set-top box (10), although copy protected, is fully watchable.

It follows therefore that the scrambled signals of the cited references to Ryan ('194) or Kim ('081) provide a degraded displayed image which has no entertainment value and is unacceptable to a viewer. To the contrary, a copy protected video signal of the claimed invention can be acceptably viewed, although it cannot be acceptably copied.

Once the scrambled video signal is descrambled via for example the descrambling circuits of Figures 4-6 of Ryan ('194) or circuit 202 of Figure 16 of Kim ('081), the resulting conventional signal can be acceptably viewed. However, unlike applicants' copy protected signal, as mentioned previously the resulting descrambled video signal also can be copied any

number of times and the copies can be acceptably viewed illicitly by any number of viewers because the descrambling process negates the scrambling process. It follows that the processes of Ryan ('194) or Kim ('081) have no control over an illicit copying process once the video signal is descrambled. On the other hand, the signal supplied from applicants' set top box (10) still includes the copy protection signal and cannot be successfully copied for acceptable watching.

To illustrate, in a pay per view (PPV) mode accepted by a viewer, the copy protected video signal is acceptably viewed but cannot be successfully copied. In an equivalent mode, the scrambling process of either Ryan ('194) or Kim ('081) would have to descramble the signal to allow the authorized viewing, whereupon the signal could also be copied illicitly unlike the copy protected signal of applicants' claimed invention. To reiterate, descrambling removes the scrambling effect and produces a clean video signal that is viewable and recordable.

In addition, Ryan ('194) and Kim ('081) disclose techniques for access control of a scrambling/descrambling process in which scrambling is provided by manipulating, that is, scrambling or encrypting, the video signal itself. To the contrary, applicants' claimed invention for programmably applying copy protection to a video signal involves controlling the application of an additional, separate signal, i.e., the copy protection signal, to the video signal. This constitutes another basic difference between a copy protection process and a scrambling process, which adds weight to the argument that one skilled in the art of copy protection processes would find little or no motivation to review references disclosing scrambling/descrambling processes.

Regarding now the rejection of claims 88, 89, 92 and 104-117 as anticipated by Ryan ('194). As fully discussed above, Ryan ('194) discloses a scrambling/descrambling process which is distinct from applicants' claimed copy protection process. Ergo, Ryan's process does not and cannot provide the functions and or results provided by the claimed invention.

With regards to independent claims 88, 104 and 110, applicants have variously amended the claims to include language discussed with the Examiner in the phone conference of 8/22/07, as well as language to further clarify the invention over Ryan ('194). For example, claims 88 and 104 inter alia include "a circuit including an electronic programming guide for providing a display...", (Fig. 3, block 46); "...one or more programmable copy protection signal generator (Fig. 3, block 20) for generating back porch AGC pulses (page 17, Table 1, NO[4]), and receiving one or more programmable copy protection configuration bits" (Fig. 3, block 52); and

"wherein the... signal is provided with a copy protection signal to produce a copy protected signal including back porch pulses, wherein the copy protected signal is viewable..."

Claim 110 recites inter alia "a configuration circuit for providing copy protection configuration bits indicative of the programmable copy protection signals...", and wherein the claim lists a plurality of types of copy protection signals, none of which are disclosed or remotely suggested in the scrambling process of Ryan ('194). In addition, claim 110 further recites the inclusion of at least one back porch pulse with or without one or more of the listed copy protection signals.

In the Office Action, with reference to claims 88, 89, 92 and 104-107, the Examiner maintains that Ryan ('194) discloses "copy protection control software," and regarding claim 110, that Ryan ('194) discloses "providing at least one copy protection signal from a plurality of programmable video copy protection signals..."

That is, the Examiner has concluded that in Figure 8, block 240 of Ryan ('194) there is a software control within the copy protection circuitry. To the contrary, block 220 generates a N+1 user bit, which is supplied to block 240. The user bit N+1 is controlled via Figure 7's "operator controlled anticopy control switch 174 (a simple on or off switch) which creates a logic high signal that acts as an anticopy signal 176..." See col. 5, lines 52 to 57 of Ryan ('194). To reiterate, user bit N+1 is recorded via block 222 in Figure 7, and then the user bit N+1 is retrieved via block 220 in Figure 8. Thus, block 240 is activated or deactivated via a high or low signal from the user bit N+1. Because the N+1 bit is either high or low, which conveys an on or off command, there is no programming or reconfiguration of the (single) copy protection signal within block 240. Ergo, the user bit N+1 is not, and cannot function as, a programming bit. Likewise, block 240 does not contain a plurality of programmable copy protection signals, as recited in the claims. Still further, Ryan ('194) fails to suggest multiple mode control bits capable of selecting one or more of a plurality of copy protection signals, that is, copy protection configurations, to be applied to the video signal.

Accordingly, applicants' respectfully submit that the claims 88, 89, 92, 104-107 and 110 are not anticipated by Ryan ('194).

Concerning claims 108,109, Ryan ('194) in col. 7, lines 33-38 discusses pulse pairs of a negative going pulse followed by a positive going pulse. To the contrary, claim 108 recites (negative going) horizontal and vertical sync pulses which are not pulse pairs. Thus, the

Examiner has confused pseudo sync and AGC pulse pair signals with applicants' claim 108 which recites a video signal with horizontal and vertical sync signals. The sync signals recited in claim 108 are only negative going pulses, and there are no negative going pulses followed closely by positive goings pulses when dealing with horizontal and or vertical sync pulses.

Claim 109 recites a modification to the amplitude of the horizontal and or vertical sync pulses (page 17, Table 1, NO[1] and NO[0]). Ryan ('194) fails to disclose or suggest modifying an amplitude of H or V sync pulses to provide copy protection. That is, claim 109 recites changing the amplitude of horizontal and or vertical sync pulses, whereas Ryan ('194) does not mention changing the amplitude of sync signals. As a matter of fact, Ryan ('194) does not mention changing the amplitude of pseudo sync signals either.

It follows therefore that Ryan ('194) fails to disclose the combination of features recited in the claims 88, 104 or 110, and thus in the claims 89, 92, 105-109 and 111-117, respectfully dependent thereon.

With regards now to the rejection of claims 63-80, 82-85, 97, 99-101 and 103 as anticipated by Kim ('081), as fully discussed previously, Kim also discloses a scrambling/descrambling process which, as in Ryan ('194) does not disclose, suggest or intend the provision of a plurality of programmable copy protection configurations, and the application of one or more of the programmable copy protection configurations in response to a mode control command (signal). (See page 17, Table 1, NO[0] through NO[7]).

As also discussed previously, applicants' mode (byte) command provides a plurality of operating mode commands in the form of selected bits which determine which components of the copy protection signals, made available by the separately stored, or transmitted, configuration control bits (a second control signal), are to be selected, to define thereby the type of copy protection applied to the video signal. (See the application page 9, lines 6-10.) An example of various operating modes NO[0] – NO[7] determined by the mode command is shown in Table 1 in page 17 of the instant application. As readily seen, the mode command selects one or more components of the copy protection configuration such as, for example, the location of pseudo sync and AGC pulses, locations of lines with phase shifted color bursts, generation of back porch pulses, H or V sync amplitude reduction or deletion, etc., which constitute the particular form of the copy protection signal or signals being applied to the video signal. Kim ('081) fails to disclose such a mode control signal capable of the many controls shown in Table 1. In fact, there

is no need for such a multiple function mode command in the scrambling process of Kim (as well as Ryan ('194)).

In addition, Kim ('081) fails to disclose, suggest or intend a control signal which is the equivalent of applicants' second control signal, i.e., a programmable copy protection configuration control signal (configuration bit pattern) of previous discussion. There is no motivation or intent in Kim ('081) to include a programmable configuration bit pattern such as applicants, since Kim (as Ryan ('194)) applies a scrambling/descrambling process with specific, preselected parameters which are not changed and/or updated in the manner of the claimed invention.

That is, applicants' separate programmable configuration bit pattern, defines the form of the copy protection signal which is used to protect the video signal. (See page 9, lines 6-9.) This programmable configuration bit pattern is the control signal which is stored in, or transmitted to, the encoder IC(20) in the set-top box (10), FIGs. 2 and 3 of the application.

In addition, the programmable configuration bit pattern provides an additional feature not disclosed or suggested in Kim ('081) or Ryan ('194). That is, the configuration bit pattern can be remotely programmed to allow ongoing updating and thus optimization of the configuration of the copy protection signal, for example to the particular equipment in the consumer marketplace. It follows that the programmable configuration bit pattern allows the service provider to periodically download new and different configuration bit patterns to each set-top box or to multiple set top boxes. Kim ('081) (or Ryan ('194)) has no use for and fails to suggest such a configuration byte command, i.e., a separately stored or transmitted, programmable configuration bit pattern.

Accordingly, independent claims 63, 70, 74, 80, 82-84 and 94 have been variously amended to include language to the effect that the copy protected video signal is viewable (watchable) but is not recordable or copiable on a recorder. As fully discussed above, such feature is not possible in the scrambling process of Kim ('081). See col. 14, lines 17-24 which states that the program receiving portion 202 (inter alia) "descrambles and decodes the bit stream from... portion 201" and then goes on to state "the descrambled and decoded bit stream is displayed or recorded...". Ergo, Kim ('081) descrambles the signal (i.e., removes the scrambling effect and thus the copyright protection) whereby the signal then can be displayed or recorded.

To the contrary, in applicants' claimed invention the copy protection does not have to be removed in order to display the signal, and the copy protected signal cannot be recorded.

It follows that the claims 63-80, 82-85, 97, 99-101 and 103 are not anticipated by Kim ('081).

It has consistently been held by the courts that an anticipating reference under 35 USC 102 must disclose every material element of the claimed invention, that is, must identically describe applicants' invention, and must, together with the knowledge of one of ordinary skill in the art, enable the practice of the invention. See, for example, Kalman v. Kimberly-Clark, 713 F.2d 760, 218 USPQ 781 (Fed. Cir. 1983); Jamesbury Corp. v. Litton Industrial Products Inc., 756 F.2d at 1560, 225 USPQ 253,256 (Fed. Cir 1985); Northlake Marketing & Supply Inc. v Glaverbel S.A., 45 USPQ2d 1541 (N.D.IL. 1997); Database Excelleration Systems Inc. v. Imperial Technology Inc., 50 USPQ2d 1527 (N.D.IL. 1999); General Electric Co. v. Nintendo Co., 50 USPQ2d 1910 (CAFC 1999); Ex parte Rozzi, 63 USPQ2d 1196 (BPAI 2002).

Accordingly, referring to claim 88, 89, 92, 104-107 and 63-80, 82-85, 97, 99-101 and 103, as fully argued above, Ryan ('194) and or Kim ('081) fail to identically describe applicants' invention as claimed, and further fail to enable one skilled in the art to practice the claimed invention from Ryan or Kim alone, as is required under 35 USC 102, without re-inventing Ryan or Kim by exertion of his own incentive skill, and/or without recourse to the teachings of this application, for the reasons fully discussed above. Applicants respectfully submit that the only suggestion for arriving at the features of the present invention is found only in the teachings of the present application itself. Thus it appears that the various rejections are formulated as a result of hindsight and are based on an unobvious interpretation of the teachings of Ryan ('194) or Kim ('081) made in view of the disclosure in the present application.

With regards now to claim 86, rejected under 35 USC 103(a) as unpatentable over Kim ('081), the claim 86 depends from claim 84 which is believed not anticipated as argued above. In addition, claim 86 further recites "an electronic programming guide or flash memory for supplying the programmable copy protection signal." This feature is not disclosed or suggested in Kim ('081) who, as discussed above, fails to suggest supplying one or more programmable copy protection signal.

Claims 90 and 91 are dependent on claim 88, which as discussed above is believed allowable over Ryan ('194). Ergo, the claims 90 and 91 recite further characterizations of claim 88 and are likewise believed allowable.

Regarding claims 79, 81, 87 and 102, rejected under 35 USC 103(a) as unpatentable over Kim ('081) in view of Oguro (US 5,907,655A), applicants respectfully submit that the combination of the scrambling process of Kim ('081) with the copy protection signals of Oguro ('655) is unworkable and thus an improper combination of prior art references.

To illustrate, the combination of prior art consisting of Kim's ('081) scrambling signal with Oguro's ('655) ACP (copy protection) signals would cause a problem in that the descrambler in Kim ('081) would reproduce an un-viewable picture or image. Ergo, the combination of features as proposed by the Examiner would be unobvious to those skilled in the art and, in fact, the unworkable combination reinforces applicants' contention that the claims 79, 81, 87 and 102 are novel and patentable over Kim ('081) in view of Oguro ('655).

In summary, applicants respectfully submit that the claims 63-92, 97 and 99-117 are now in condition for allowance in view of the amendments and the Remarks above, which action is earnestly solicited.

If the Examiner persists in the final rejection, applicants respectfully request entry of this amendment for purposes of appeal.

If there are any questions about this paper or the associated application, please contact the undersigned at the telephone number given below. If it is determined that a telephone conference would expedite the prosecution of this application, the Examiner is invited to telephone the undersigned at the number given below.

Please charge any required fees due to this amendment to Deposit Account No. 13-0762.

Respectfully submitted,

MACROVISION CORPORATION

Dated: __10/17__, 2007

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APPENDIX

APPENDIX